WHAT IS CLAIMED:

1. A method of producing plant seeds which impart pathogen resistance to plants grown from the seeds, said method comprising:

applying a hypersensitive response elicitor polypeptide or protein in a non-infectious form to a plant seed under conditions effective to impart pathogen resistance to a plant grown from the seeds.

2. A method according to claim 1, wherein the hypersensitive response elicitor polypeptide or protein is in isolated form.

3. A method according to claim 2, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a pathogen selected from the group consisting of *Erwinia*, *Pseudomonas*, *Xanthomonas*, *Phytophthora*, and mixtures thereof.

4. A method according to claim 3, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia chrysanthemi*.

5. A method according to claim 3, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia amylovora*.

6. A method according to claim 3, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Pseudomonas syringae*.

7. A method according to claim 3, wherein the hypersensitive response elicitor polypeptide or protein

corresponds to that derived from *Pseudomonas solanacearum*.

8. A method according to claim 3, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Xanthomonas campestris*.

9. A method according to claim 3, wherein the hypersensitive response elicitor polypeptide or protein corresponds to a *Phytophthora* species.

10. A method according to claim 2, wherein the plant is selected from the group consisting of dicots and monocots.

11. A method according to claim 10, wherein the plant is selected from the group consisting of rice, wheat, barley, rye, oats, cotton, sunflower, canola, peanut, corn, potato, sweet potato, bean, pea, chicory, lettuce, endive, cabbage, cauliflower, broccoli, turnip, radish, spinach, onion, garlic, eggplant, pepper, celery, carrot, squash, pumpkin, zucchini, cucumber, apple, pear, melon, strawberry, grape, raspberry, pineapple, soybean, tobacco, tomato, sorghum, and sugarcane.

12. A method according to claim 10, wherein the plant is selected from the group consisting of rose, *Saintpaulia*, petunia, *Pelargonium*, poinsettia, chrysanthemum, carnation, and zinnia.

13. A method according to claim 2, wherein the pathogen to which the plant is resistant is selected from the group consisting of viruses, bacteria, fungi, and combinations thereof.

14. A method according to claim 2, wherein said applying is carried out by spraying, injection, coating, dusting or immersion.

15. A method according to claim 2, wherein the hypersensitive response elicitor polypeptide or protein is applied to plant seeds as a composition further comprising a carrier.

16. A method according to claim 15, wherein the carrier is selected from the group consisting of water, aqueous solutions, slurries, and powders.

17. A method according to claim 15, wherein the composition contains greater than .5 nM of the hypersensitive response elicitor polypeptide or protein.

18. A method according to claim 15, wherein the composition further contains additives selected from the group consisting of fertilizer, insecticide, nematicide, fungicide, herbicide, and mixtures thereof.

19. A method according to claim 1, wherein the hypersensitive response elicitor polypeptide or protein is applied as bacteria which do not cause disease and are transformed with a gene encoding the hypersensitive response elicitor polypeptide or protein.

20. A method according to claim 1, wherein the hypersensitive response elicitor polypeptide or protein is applied as bacteria which cause disease in some plant species, but not in those whose seeds are subjected to said applying, and contain a gene encoding the hypersensitive response elicitor polypeptide or protein.

21. A method according to claim 2, wherein said applying causes infiltration of the polypeptide or protein into the plant seed.

22. A method according to claim 2 further comprising:

planting in soil the seeds to which the hypersensitive response elicitor protein or polypeptide has been applied and

propagating plants from the planted seeds.

23. A method according to claim 22 further comprising:

applying the hypersensitive response elicitor polypeptide or protein to the propagated plants to enhance the plant's pathogen resistance.

24. A method according to claim 2, wherein the hypersensitive response elicitor protein or polypeptide is a fungal hypersensitive response elicitor.

25. A pathogen-resistance imparting plant seed to which a non-infectious hypersensitive response elicitor polypeptide or protein has been applied.

26. A pathogen-resistance imparting plant seed according to claim 25, wherein the hypersensitive response elicitor polypeptide or protein is in isolated form.

27. A pathogen-resistance imparting plant seed according to claim 26, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a pathogen selected from the group

consisting of *Erwinia*, *Pseudomonas*, *Xanthomonas*, *Phytophthora*, and mixtures thereof.

28. A pathogen-resistance imparting plant seed according to claim 27, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia chrysanthemi*.

29. A pathogen-resistance imparting plant seed according to claim 27, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia amylovora*.

30. A pathogen-resistance imparting plant seed according to claim 27, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Pseudomonas syringae*.

31. A pathogen-resistance imparting plant seed according to claim 27, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Pseudomonas solanacearum*.

32. A pathogen-resistance imparting plant seed according to claim 27, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Xanthomonas campestris*.

33. A pathogen-resistance imparting plant seed according to claim 27, wherein the hypersensitive response polypeptide or protein corresponds to that derived from a *Phytophthora* species.

34. A pathogen-resistance imparting plant seed according to claim 26, wherein the plant seed is for

plants selected from the group consisting of dicots and monocots.

35. A pathogen-resistance imparting plant seed according to claim 34, wherein the plant is selected from the group consisting of rice, wheat, barley, rye, oats, cotton, sunflower, canola, peanut, potato, sweet potato, bean, pea, chicory, lettuce, endive, cabbage, cauliflower, broccoli, turnip, radish, spinach, onion, garlic, eggplant, pepper, celery, carrot, squash, pumpkin, zucchini, cucumber, apple, pear, melon, strawberry, grape, raspberry, pineapple, soybean, tobacco, tomato, sorghum, and sugarcane.

36. A pathogen-resistance imparting plant seed according to claim 34, wherein the plant is selected from the group consisting of rose, *Saintpaulia*, petunia, *Pelangonium*, poinsettia, chrysanthemum, carnation, and zinnia.

37. A pathogen-resistance imparting plant seed according to claim 27, wherein the pathogen to which the plant is resistant is selected from the group consisting of a virus, bacterium, fungus, nematode, and combinations thereof.

38. A pathogen-resistance imparting plant seed according to claim 25, wherein the plant seed cells are in contact with bacteria which do not cause disease and are transformed with a gene encoding the hypersensitive response elicitor polypeptide or protein.

39. A pathogen-resistance imparting plant seed according to claim 25, wherein the plant seed cells are in contact with bacteria which do not cause disease in

the plant, but do cause disease in other plant species, and contain a gene encoding the hypersensitive response elicitor polypeptide or protein.

40. A pathogen-resistance imparting plant seed according to claim 26, wherein the plant seed is infiltrated with the polypeptide or protein.

41. A method of imparting pathogen resistance to plants comprising:

providing a transgenic plant seed transformed with a DNA molecule encoding a hypersensitive response elicitor polypeptide or protein;

planting the transgenic plant seed in soil; and

propagating a plant from the planted seed under conditions effective to impart pathogen resistance to the plant.

Sub a27 42. A method according to claim 39, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a pathogen selected from the group consisting of *Erwinia*, *Pseudomonas*, *Xanthomonas*, *Phytophthora*, and mixtures thereof.

43. A method according to claim 42, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia chrysanthemi*.

44. A method according to claim 42, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia amylovora*.

45. A method according to claim 42, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Pseudomonas syringae*.

46. A method according to claim 42, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Pseudomonas solanacearum*.

47. A method according to claim 42, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Xanthomonas campestris*.

48. A method according to claim 42, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a *Phytophthora* species.

49. A method according to claim 41, wherein the plant is selected from the group consisting of dicots and monocots.

50. A method according to claim 49, wherein the plant is selected from the group consisting of rice, wheat, barley, rye, oats, cotton, sunflower, canola, peanut, corn, potato, sweet potato, bean, pea, chicory, lettuce, endive, cabbage, cauliflower, broccoli, turnip, radish, spinach, onion, garlic, eggplant, pepper, celery, carrot, squash, pumpkin, zucchini, cucumber, apple, pear, melon, strawberry, grape, raspberry, pineapple, soybean, tobacco, tomato, sorghum, and sugarcane.

51. A method according to claim 49, wherein the plant is selected from the group consisting of rose, *Saintpaulia*, petunia, *Pelargonium*, poinsettia, chrysanthemum, carnation, and zinnia.

52. A method according to claim 41, wherein the pathogen to which the plant is resistant is selected from the group consisting of viruses, bacteria, fungi, and combinations thereof.

53. A method according to claim 41 further comprising:

applying the hypersensitive response elicitor polypeptide or protein to the propagated plants to enhance the plant's pathogen resistance.

54. A method according to claim 41, wherein the hypersensitive response elicitor protein or polypeptide is a fungal hypersensitive response elicitor.

Sub a3 7 55. A plant produced by the method of claim 22.

56. A plant seed from the plant produced by the method of claim 22.

57. A plant propagule from the plant produced by the method of claim 22.

58. A plant produced by the method of claim 41.

59. A plant seed from the plant produced by the method of claim 41.

60. A plant propagule from the plant produced by the method of claim 41.

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